CLAIMS

1. A system, for providing focus elements associated with a biological probe array, comprising:

a biological probe array having an active area; and

a plurality of focus elements associated with the biological probe array, wherein the focus elements include an unambiguous pattern.

2. The system of claim 1, wherein:

the plurality of focus elements are disposed outside of the active area.

3. The system of claim 1, wherein:

the plurality of focus elements represent reflective elements.

4. The system of claim 3, wherein:

the reflective elements represent chrome elements.

5. The system of claim 1, wherein:

the plurality of focus elements are enabled to hybridize one or more target molecules.

6. The system of claim 5, wherein:

the one or more target molecules represent molecules present in a biological sample.

7. The system of claim 5, wherein:

the one or more target molecules represent molecules added by a user.

8 The system of claim 1, wherein:

the unambiguous pattern represents a checkerboard pattern.

9. The system of claim 1, further comprising:

a scanner for acquiring an image of the plurality of focus elements; and

an image analysis application enabled to execute one or more positional adjustments of the biological probe array based, at least in part, upon the image of the plurality of focus elements.

10. The system of claim 9, wherein:

the one or more positional adjustments of the biological probe array represents translating the biological probe array in one or more axes, wherein the one or more axes represents a X, Y, Z, roll, and pitch axes.

11. The system of claim 9, wherein:

the one or more positional adjustments represent placing each of the plurality of probes in a best plane of focus.

12. The system of claim 9, wherein:

the image analysis application applies a deconvolution method to the image of the plurality of focus elements.

13. A method, for positional adjustment of a biological probe array, comprising:

acquiring an image of a plurality of focus elements disposed on a biological probe array, wherein a plurality of probes are disposed in an active area of the biological probe array; and

executing one or more positional adjustments of the biological probe array based, at least in part, upon the image of the plurality of focus elements, wherein the plurality of focus elements represent an unambiguous pattern.

14. The method of claim 13, wherein:

the plurality of focus elements are disposed outside of the active area.

15. The method of claim 13, wherein:

the unambiguous pattern represents a checkerboard pattern.

16. The method of claim 13, wherein:

the step of executing one or more positional adjustments represents translating the biological probe array in one or more axes, wherein the one or more axes represents a X, Y Z, roll, and pitch axes.

17. The method of claim 13, wherein:

the one or more positional adjustments represents placing each of the plurality of probes in a best plane of focus.

18. A method, for positional adjustment of a biological probe array, comprising:

acquiring an image of a plurality of focus elements disposed on a biological probe array, wherein a plurality of probes are disposed in an active area of the biological probe array;

applying a deconvolution method to the image of the plurality of focus elements; and

executing one or more positional adjustments of the biological probe array based, at least in part, upon the deconvolution method of the image.

19. The method of claim 18, wherein:

the step of executing one or more positional adjustments represents placing each of the plurality of probes in a best plane of focus.

20. A system, for providing calibration elements associated with a biological probe array, comprising:

a biological probe array having an active area of the biological probe array; and

a plurality of calibration elements disposed on the biological probe array, wherein the plurality of calibration elements are disposed in a rectilinear pattern.

21. The system of claim 20, wherein:

the plurality of calibration elements are disposed in the active are of the biological probe array.

22. The system of claim 20, wherein:

each of the plurality of calibration elements represents a chrome element.

23. The system of claim 22, wherein:

each of the plurality of calibration elements has a vertical component and a horizontal component.

24. The system of claim 23, wherein:

the vertical component is associated with X-axis linearity and the horizontal component is associated with Y-axis linearity.

25. The system of claim 20, further comprising:

a scanner for acquiring an image of a plurality of probes and the plurality of calibration elements; and

an image analysis application enabled to generate a plurality of error correction values.

26. The system of claim 25, wherein:

each error correction value is based, at least in part, upon a difference between a position of each calibration element in the acquired image and an actual position of a corresponding calibration element disposed on the biological probe array.

27. The system of claim 25, wherein:

each of the plurality of error correction values is associated with a pixel position in the image.

28. A method, for determining error associated with a scanner instrument, comprising:

acquiring an image of a plurality of target molecules hybridized to a plurality of probes and a plurality of calibration elements; and

generating a plurality of error correction values, wherein each error correction value is based, at least in part, upon a difference between a position of each calibration element in the acquired image and an actual position of a corresponding calibration element disposed on the biological probe array.

29. The method of claim 28, wherein:

the plurality of calibration elements are disposed in a rectilinear pattern.

30. The system of claim 28, wherein:

the plurality of calibration elements are disposed in the active are of the biological probe array.

31. A method, for determining error associated with a scanner instrument, comprising:

acquiring an image of a plurality of target molecules hybridized to a plurality of probes and a plurality of calibration elements;

generating a plurality of error correction values, wherein each error correction value is based, at least in part, upon a difference between a position of each calibration element in the acquired image and an actual position of a corresponding calibration element disposed on the biological probe array; and

correlating one or more of the plurality of error correction values with each of a plurality of pixels in the image, wherein the correlating represents adjusting the position of each pixel based, at least in part, upon the one or more error correction values.

32. The method of claim 31, wherein:

the one or more error correction values represents an X-axis linearity correction value.

33. The method of claim 31, wherein:

the one or more error correction values represents a Y-axis linearity correction value.

34. The method of claim 31, wherein:

the plurality of pixels in the image represents all pixels in the image.

35. A system, for providing focus elements associated with a plurality biological probe arrays, comprising:

a plurality of biological probe arrays each having an active area; and

a plurality of focus elements disposed on the biological probe array, wherein the focus elements represent an unambiguous pattern.

36. A system, for providing calibration elements associated with a plurality biological probe arrays, comprising:

a plurality of biological probe arrays each having an active area; and

a plurality of calibration elements disposed on the biological probe array, wherein the plurality of calibration elements are disposed in a rectilinear pattern.